REMARKS

Claims 2-6, 9-10, 12, 16-22, 24-32, 34-36, 38, 40 and 46-58 are pending in this application. By this amendment, claims 2-6, 9-10, 12, 16-22, 24-32, 34-36, 38 and 40 have been amended and new claims 46-58 have been presented for examination. Moreover, claims 1, 7-8, 11, 13-15, 23, 33, 37, 39 and 41-45 have been canceled. In light of the amendments above and remarks set forth below, Applicant respectfully submits that each of the pending claims is in immediate condition for allowance.

As an initial matter, previously submitted claims 42-45 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. These claims have been canceled and new method claims 50-58 have been submitted for examination. Moreover, Applicant notes that the Office Action previously rejected claims 42-45 based on the machine or transformation test. However, based on the Supreme Court's recent decision in *Bilski v. Kappos*, it is clear that the machine or transformation test is no longer the sole test to determine statutory subject matter under § 101. In light of the Supreme Court holding, claims 50-58 clearly recite statutory subject matter under § 101. Accordingly, Applicant respectfully notes that any future rejection of the pending claims based on § 101 is improper.

In addition, previously submitted claims 39-41 and 43-45 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 39, 41 and 43-45 have been canceled. Moreover, claim 40 has been amended as shown above. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection based on § 112.

Finally, previously submitted claims 1-8, 10-19, 24-29, 33, 37-38 and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over John (U.S. Patent No. 3,780,724). As shown above, claim 1 has been canceled and new independent claim 46 has been submitted for examination. New claim 46 and its dependent claims is patentable over John for the following reasons.

Claim 46 requires "a sensor configured to measure the neuronal rhythmic activity in response to the plurality of pulses," "a control unit configured to determine at least one frequency of the plurality of excitation frequencies in which the measured neuronal rhythmic activity has a maximum amplitude of pathological rhythm" and that "the control unit is further configured to control the stimulator to generate an entraining periodic pulse sequence operating at the at least one frequency to entrain the phase dynamic of the neuronal rhythmic activity."[1] Accordingly, claim 46 requires that an "entraining periodic pulse sequence" is generated based on measured neuronal rhythmic activity resulting from a plurality of stimulation pulses at a plurality of excitation frequencies.

In contrast, John merely discloses the concept of employing ***predefined*** stimulation for brain activity measurement purposes. (See columns 7-8 of John.) John does not provide any disclosure or suggestion of controlling and/or modifying the stimuli based on measured values of brain activity. Each of the testing methods disclosed in John is based on preprogrammed testing patterns. Moreover, there is no disclosure in John to suggest modifying the programmed testing methods to base the testing sequences on measured neuronal rhythmic activity. Accordingly,

[1] Applicant notes that support for this claim can be found at least in paragraph [0091] of the published application. (*See* U.S. Patent Pub. No. 2006/0047324).

Applicant respectfully submits that claim 46 along with its dependent claims is patentable over John for at least these reasons.

Furthermore, claim 24, which now depends on claim 46, recites "wherein the control unit is further configured to determine the vulnerable phase of the neuronal rhythmic activity and wherein the stimulator is further configured to generate the desynchronization pulse at the vulnerable phase." The specification of the instant application defines the vulnerable phase as the "critical phase of the corrective oscillation of the neuronal population." (*See* paragraph [0064 of the published application; U.S. Patent Pub. No. 2006/0047324). As justification of the rejection of claim 24, the Office Action cites column 8, lines 10-24 of John. That cited disclosure simply provides an exemplary method of presenting the preprogrammed stimulus to a patient. There is nothing in the cited portion or elsewhere in John that discloses determining the vulnerable phase, *i.e.*, the critical phase of the corrective oscillation of the neuronal population. Moreover, John fails to disclose generating the desynchronization pulse at the vulnerable phase.

Applicant therefore asserts that dependent claim 24 is patentable over John for this additional reason. If this rejection is maintained, Applicant respectfully requests a more detailed explanation of how the explicitly recited limitation is disclosed in the prior art of record.

In addition, with regard to the rejection of dependent claims 9, 20-22, 30-32 and 34-36 under 35 U.S.C. § 103(a), Applicant respectfully notes that the additional references (Nagano and Czeisler) are cited for their disclosure of additional limitations, which, even if they were to show, do not cure the deficiencies in John as discussed above. Therefore, Applicant reasserts that all of the pending dependent claims are also in immediate condition for allowance.

Finally, Applicant notes that new method claims 50-58 have been added to more fully cover the scope of the present invention. New claims 50-58 include limitations that are neither disclosed nor suggested by John alone or in combination with the other prior art of record. Favorable consideration and allowance of claims 50-58 is respectfully requested.

In view of the above, Applicant respectfully reasserts that each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

In the event a fee is required or if any additional fee during the prosecution of this application is not paid, the Patent Office is authorized to charge the underpayment to Deposit Account No. 50-2215.

Respectfully submitted,

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